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SHARP 12P-26 SERVICE MANUAL

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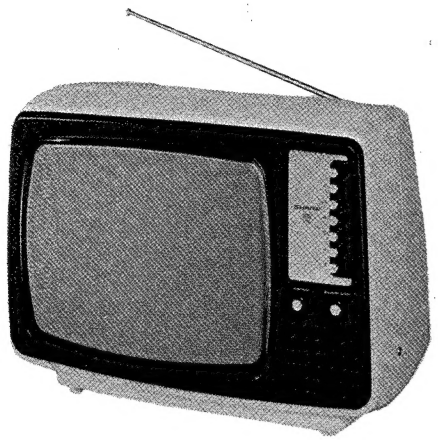


Solid State Portable TV

MODEL 12P-26

SPECIFICATIONS

Power Supply	220 Volts 50Hz AC or 12 Volts DC
Power Consumption	36 Watts AC 16 Watts DC
Tuning Reange	CCIR Standard System VHF Channel 2 ~ 12 UHF Channel 21 ~ 69
Intermediate Frequency	Picture 38.9 MHz Sound 33.4 MHz
Antenna Input Impedance	75 ohms Unbalanced
Intercarrier Sound System	5.5 MHz
Speaker Size & Type	32 ohm 8cm Round Type P.D.S.
Dimensions	Approx. 15-63/64" (W) x 11-25/32" (H) x 11-5/8" (D)
Weight	17.2 lbs.

Transistor Complement

Q1	2SC1070 or 2SC761	UHF RF Amp.
Q2	2SC288 or 2SC684	UHF Oscillator
Q101	2SC606 or 2SC683 Ⓑ	VHF RF Amp.
Q102	2SC535 Ⓑ	VHF Mixer
Q103	2SC535 Ⓑ	VHF IF Amp.
Q104	2SC717	VHF Oscillator
Q105	2SC606	UHF IF Amp.
Q201	2SC682 Ⓐ or 2SC398	1st Pix IF Amp.
Q202	2SC682 Ⓐ or 2SC398	2nd Pix IF Amp.
Q203	2SC717 or 2SC383	3rd Pix IF Amp.
Q401	2SC458 Ⓒ	Audio Amp.
Q402	2SC1213 Ⓒ	Audio Output
Q403	2SA673 Ⓒ	Audio Output
Q601	2SC458 Ⓒ	Vertical Oscillator
Q602	2SC1213 Ⓓ	Vertical Drive
Q603	2SC1162WT Ⓒ	Vertical Output
Q604	2SA715WT Ⓒ	Vertical Output
Q701	2SC1213 Ⓒ	Horizontal Drive
Q702	2SC681A	Horizontal Output
Q801	2SC454 Ⓒ or 2SC380A Ⓨ	1st Video Amp.
Q802	2SC1514 or 2SC1569	2nd Video Amp.
Q101	2SC1213 Ⓒ	+B Error Amp.
Q902	2SA616 (2)	+B Regulator

Diode Complement

D1	1S1555	UHF AGC Delay
D2	1S1555	UHF Protector
D3	1SS16 or 1S1926	UHF Mixer
D4, D5, D6	1S2208 or BB105B	UHF Tuning
D7	WZ-081	UHF Voltage Regulator
D101, D102	1S2588	VHF Switching
D103	1S2209 or BB105G	VHF Tuning
D104	1S1555	VHF Protector
D105	1S2209 or BB105G	VHF Tuning
D106, D107	1S2588	VHF Switching
D108, D109	1S2209 or BB105G	VHF Tuning
D110	1S2588	VHF Switching
D111, D112	1S1555	VHF Switching
D201	1N60	Pix IF Detector
SR601, SR602	RH-DX0033TAZZ	Vertical Circuit
SR701	RH-DX0057TAZZ	Damper
SR702	RH-DX0056TAZZ	Boost
SR703	RH-DX0063CEZZ	Horizontal Circuit
SR704, SR705, SR706	RH-DX0062CEZZ	Horizontal Circuit
SR707	RH-DX0033TAZZ	Horizontal Circuit
SR901, SR902, SR903, SR904	RH-DX0039TAZZ	+B Rectifier
SR905	RH-DX0033TAZZ	Voltage Regulator Circuit
ZD901	RH-EX0008TAZZ	Voltage Reference

Integrated Circuit

IC-181	RH-IX0037CEZZ	Tuning Voltage Regulator
IC-251	RH-IX0007TAZZ	AGC & Sync. Separator
IC-301	RH-IX0001TAZZ	Sound IF Amp. Sound Detector & Audio Amp.
IC-701	RH-IX0008TAZZ	Horizontal AFC & Oscillator

Miscellaneous Semiconductors

VR401	RH-VX0004TAZZ	Audio Circuit
VR601	RH-VX0004TAZZ	Vertical Circuit
VR901	RH-VX0004TAZZ	Regulator Circuit
TH251	5KD-5	AGC Circuit
TH601	5KD-5	Vertical Circuit

Tube

V801	E2116/ A31-290W A31-20W	Picture Tube

SHARP CORPORATION OSAKA, JAPAN

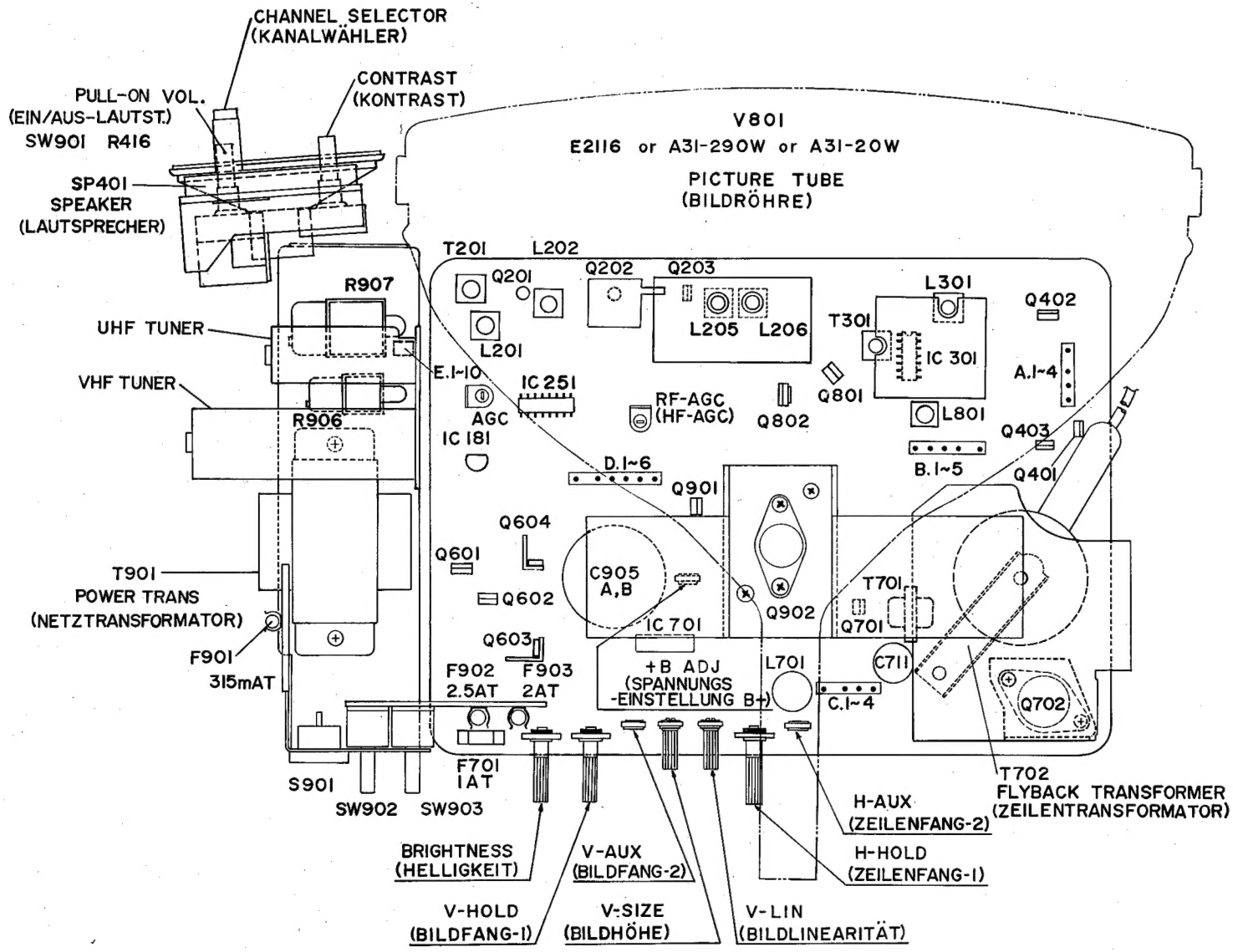


Figure 1 CHASSIS LAYOUT

DC OUTPUT VOLTAGE ALIGNMENT

1. Set AC power supply voltage to 220V (50Hz).
2. Set AC-DC selector switch (SW903) to AC position and TV-CH selector switch (SW902) to TV position, and switch on the switch SW901 to turn on the unit. At the time, make sure that the unit has been in a normal condition.
3. Adjust the +B adjust control (collector of Q902) to 11.5 ±0.2V.
   Caution: +B voltage is not adjust to over 13V for protection integrated circuit.

AGC Alignment

1. Rotate the RF AGC control (R253) to the maximum counter-clockwise.
2. Receive a test pattern in normal operating receiver condition. (at CCIR)
3. Set the electric field intensity to 60dB ±2dB and RF oscillator to the proper frequency.
4. Adjust the AGC control (R254) to 1.0Vp-p ±0.1V detection output at TP801 that is verifyed oscilloscope.
5. Whatching the picture in normal operating condition, rotate the RF AGC control (R253) to adjust it just before appearance of the noise in the picture.
6. Set the electric field intensity to 95dB ±2dB and verify no anomalous developing as follows are appears.
   a. Excessive Contrast b. Horizontal sync lost partry.

VERTICAL AND HORIZONTAL CIRCUITS ALIGNMENT

Round Adjustment of Each Section

1. Set the AC line voltage to 220V and verify the DC output voltage 11.5 ±3 Volts.
2. Receive a test pattern in normal operating receiver condition. (at CCIR)
3. Rotate the Brightness and Contrast controls to maximum clockwise.
4. Set the H-Hold control (R701) to a stabilized point.
5. Set the V-Hold control (R608) to the mechanical center and set V-Aux. control (R607) to a stabilized point.
6. Adjust V-Lin (R614) and V-Size (R612) controls for the best vertical linearity and picture size.
7. Both horizontal and vertical centering are accomplished by rotating the centering rings mounted on the back of the deflection yoke assembly.

V-Line and V-Size Adjustment

Adjust the following steps with stabilize vertically.

1. Receive a test pattern in normal operating receiver condition. (at CCIR)
2. Adjust V-Line control (R614) to obtain the synthetical pattern (top and bottom) and the best linearity.
3. Adjust V-Size control (R612) to obtain the 10 ~ 12% over scanning.

V-Hold and V-Aux. Adjustment

1. Receiver a test pattern in normal operating receiver conditions. (at CCIR)
2. V-Aux. control is used to maintain the proper operating range of the V-Hold control (R608). Set the V-Hold control (R608) to the center of mechanical rotation, then adjust the V-Aux. control until the picture is properly locked in sync. vertically.

H-Hold and Horizontal Amplitude Alignment

1. Set the AC line voltage to 220 Volts and verify the DC output voltage 11.5 ±0.2 Volts.
2. Receive a test pattern in normal operating receiver condition. (at CCIR)
3. H-Aux. control (R707) is used to maintain the proper operating range of the H-Hold control (R701). Set the H-Hold (R701) control to the center of mechanical rotation, then adjust the H-Aux. control (R707) until the picture is properly locked in sync. vertically.
4. Turn counterclockwise the H-Hold (control) until the image will be distorted, then turn it clockwise until the image will resume its normal condition and suppose the pattern center position found at this time as being the point "a". Next, turn it clockwise until the image will be distorted, then turn it counterclockwise until the image will resune its original condition and suppose the pattern center position found this time as being the point "B". Finally, turn it counterclockwise until the pattern center comes to the gemetrical center between the points "a" and "b".
5. Set AC-DC selector switch to DC position and set DC power supply voltage to the value where the raster will disappear. Then, adjust the centering magnet to make the raster come to the center of CRT.
6. Set AC-DC selector switch to AC position and adjust the over scanning to the range of 8% to 16%. (When the over scanning is found to exceed 16%, cut out the factory jumper for H-WIDTH to remove C710. With contrast control at "MAX" and bright control at "MIN", make sure the image is not distorted at both ends.)

Electric Varactor Tuner Circuit

1. The electric varactor tuner uses variable capacitance diodes for all of its tuning circuits and DC voltage (tuning voltage) applied to these diodes is changed so that the desired channel is tuned in.
2. DC voltage applied to the diodes can be changed by changing variable resistance values inside the channel selector. (Figure 2).
3. The figures 3 and 4 represent tuning voltages of VHF tuner and UHF tuner, respectively.
4. The channel selector is a changeover switch of 3 bands, VHF-Low (2 to 4 CH), VHF-High (5 to 12 CH) and UHF. Supposed that the tuning voltage is 10 V, the VHF tuner is tuned in between 3 CH and 4 CH when the channel selector is set to VHF-Low, the VHF tuner is tuned in 9 CH when the selector is set to VHF-High, and the UHF tuner is tuned in 45 CH when the selector is set to UHF.

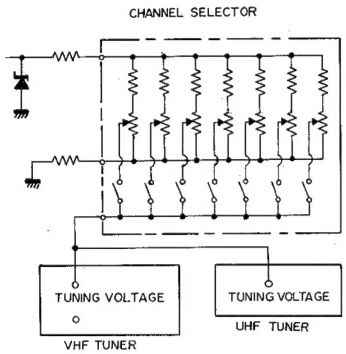


Figure 2

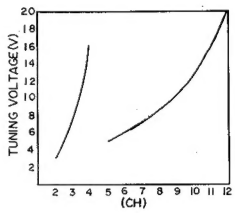


Figure 3

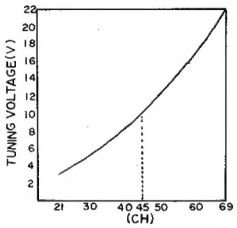


Figure 4

CHASSIS REMOVAL

Whenever it becomes necessary to remove the chassis from the cabinet, proceed in the following manner.

1. Remove the six screws Ⓐ and remove the back cabinet.
2. Pull out the all knobs from the front cabinet.
3. Disconnect the main chassis Ⓑ , Power Trans former angle Ⓒ and tuner angle Ⓓ .
4. Remove the two screws Ⓔ.
5. Remove the speaker lead Ⓕ, Coating eath Ⓖ, CRT socket Ⓗ, Deflection yoke socket Ⓘ, anode cap Ⓙ, contrast control socket Ⓚ , channel selector socket Ⓛ , and wire hold Ⓜ from the front of the cabinet.
6. Remove the two screws Ⓝ.

Removing and Installing Picture Tube

In order to remove or replace the picture tube, the chassis assemblies must be removed.
Refer to CHASSIS REMOVAL procedure.
When the chassis has been removed, proceed as follows.

1. Lay the cabinet face down on a soft pad so as not to mar the picture tube.
2. Remove the four screws Ⓞ fixing the picture tube.
3. Remove the picture tube from the cabinet.
   CAUTION: Refer to the caution label on the high voltage compartment cover. Always avoid handling the neck of the picture tube.
4. Fix the picture tube in the proper position of the front cabinet and fix four screws.
5. Reassemble the set.

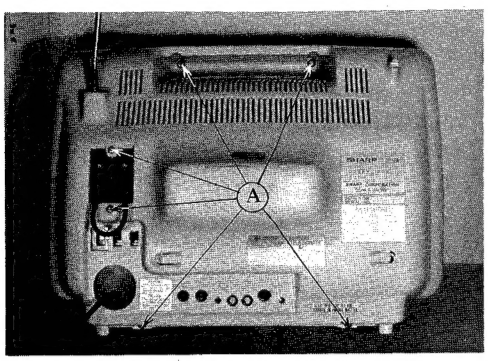


Figure 5

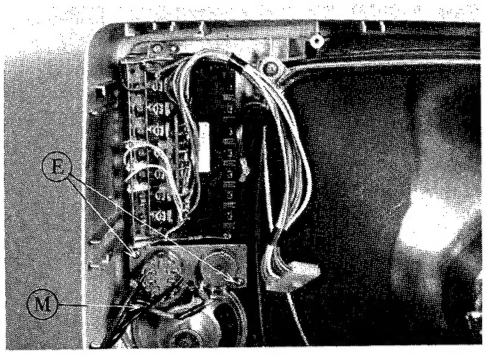


Figure 6

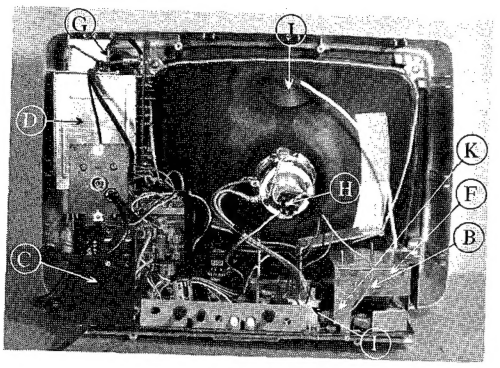


Figure 7

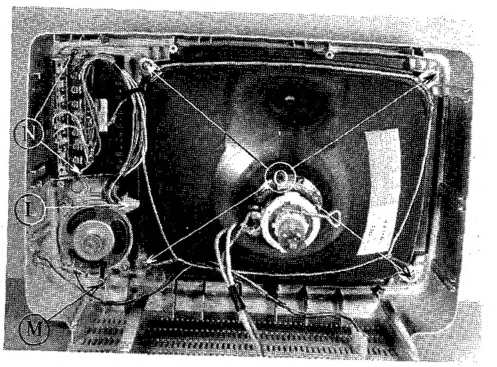


Figure 8

PICTURE IF ALIGNMENT

1. Supply the output of the sweep generator to TP203 (Base of Q203) through a 470 ohm resistor and a 0.01 MFD capacitor in series.
2. Connect input terminal of the oscilloscope to TP801 (Emitter of Q801).
3. Supply the 7~8V DC fixed bias to TP202.
4. Adjust coils (L205 and L206) to obtain the waveform shown in figure 9.
5. Supply the output of the sweep generator to TP (on VHF Tuner) through a 470 ohm resistor and a 0.01 MFD capacitor in series.
6. Adjust the trap L201 to 33.4 MHz and L202 to 40.4 MHz.
7. Supply the 4.8 ±0.2V DC fixed bias to TP202.
8. Adjust the transformers T101 (in VHF Tuner) and T201 to obtain the waveform shown in figure 10.
9. If not obtain the waveform shown in figure 10, readjust the coils (L205 and L206) and the transformers (T101 and T201).

5.5 MHz TRAP ALIGNMENT

1. Supply the 5.5 MHz center sweep output of the sweep generator to TP204 (base of Q801) through a 470 ohm resistor and a 0.01 MFD capacitor.
2. Supply the 8V DC fixed bias to TP202.
3. Connect the oscilloscope to the cathode of CRT.
4. Adjust the coil L801 to set the minimum amplitude of 5.5 MHz.

SOUND IF ALIGNMENT

1. Supply the 8V DC fixed bias to TP202.
2. Supply the FM 400Hz at 100% modulation of the sweep generator to TP204 (base of Q801) through a 0.01 MDF capacitor and a 470 ohm resisto in series.
3. Connect the oscilloscope to the volume control (terminal NO.3 of R416) through a 0.0015 MFD capacitor in parallel. (Rotate the volume control to the minimum counter-clockwise)
4. Set the output of the sweep generator to 100 dB.
5. Adjust the coil (L301) until the maximum amplitude waveform is obtained on the oscilloscope.
6. Set the output of the sweep generator to approximately 40 dB. (Drop out of limiter)
7. Adjust the transformer (T301) to obtain the waveform shown in figure 11.
   If fail the above adjustment, the waveform should obtain as figure 12.

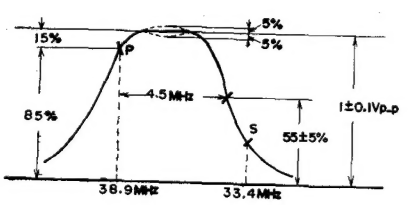


Figure 9

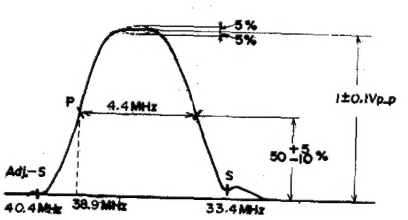


Figure 10

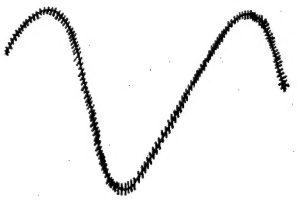


Figure 11

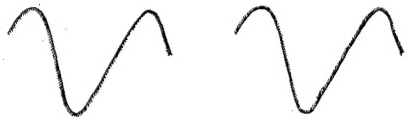


Figure 12

VHF/UHF TUNER PERFORMANCE CHECK (Refer to Figure 13.)

PRELIMINARY INFORMATION

Unless there is evidence of tampering or if electrical repairs have been made, tuner alignment is normally not required. Response Curve "A" is an indicator of the quality of tuner performance. If the response curve is obviously bad on all channels, repair, rather than alignment, is indicated. Check the B pluse voltages applied to the tuners. Also check for bad solder connections and contacts. Visually inspect the circuits for overheated components and ovbious wiring defects.

NOTE: When checking overall RF-IF response curves, bear in mind that it is necessary to verify that the video IF circuitry is operating normally and is properly aligned before an evaluation can be made on the VHF RF-IF response curve. Also, it is necessary to verify that the video IF circuitry and VHF tuner are operating normally and that these circuits are properly aligned before an evaluation can be made on the UHF RF-IF response curve.

VHF TUNER PERFORMANCE CHECK

Test Equipment Connections

GENERAL . . . The set under test should be correctly fine tuned. Fine tuning should not be adjusted while performing this tuner check. Disconnect external antenna from VHF tuner.

OSCILLOSCOPE . . . With a 2.0V P-P calibration, connect direct probe through a 15K ohm resistor to TP801.

SWEEP GENERATOR . . . Connect output to the VHF tuner antenna terminals using proper matching pad.

MARKER GENERATOR . . . Connect markers at 38.9 MHz and 34.4 MHz. loosely to Sweep Generator leads.

BIAS SUPPLY . . . Apply 4.5 ~ 4.8 volts bias to base of Q202. Adjust biases while chassis is operating.

Performance Check Turn set "on".

Starting with the VHF tuner placed in the Channel 6 position and the Sweep Generator set at the proper frequency, check the overall response curve as viewed on the Oscilloscope. This viewed curve should match, approximately, Response Curve "A". The same procedure should be used for Channels 12 through 2.

UHF TUNER PERFORMANCE CHECK

Test Equipment Connections

GENERAL . . . The video IF Alignment and VHF Tuner Check should be completed prior to this procedure. Disconnect the external antenna from UHF tuner. All equipment connections are the same as for the VHF Tuner Performance Check except the Sweep Generator.

SWEEP GENERATOR (UHF) . . . Connect output to UHF tuner antenna terminals using proper matching pad.

Performance Check

Turn set and test equipment "on".

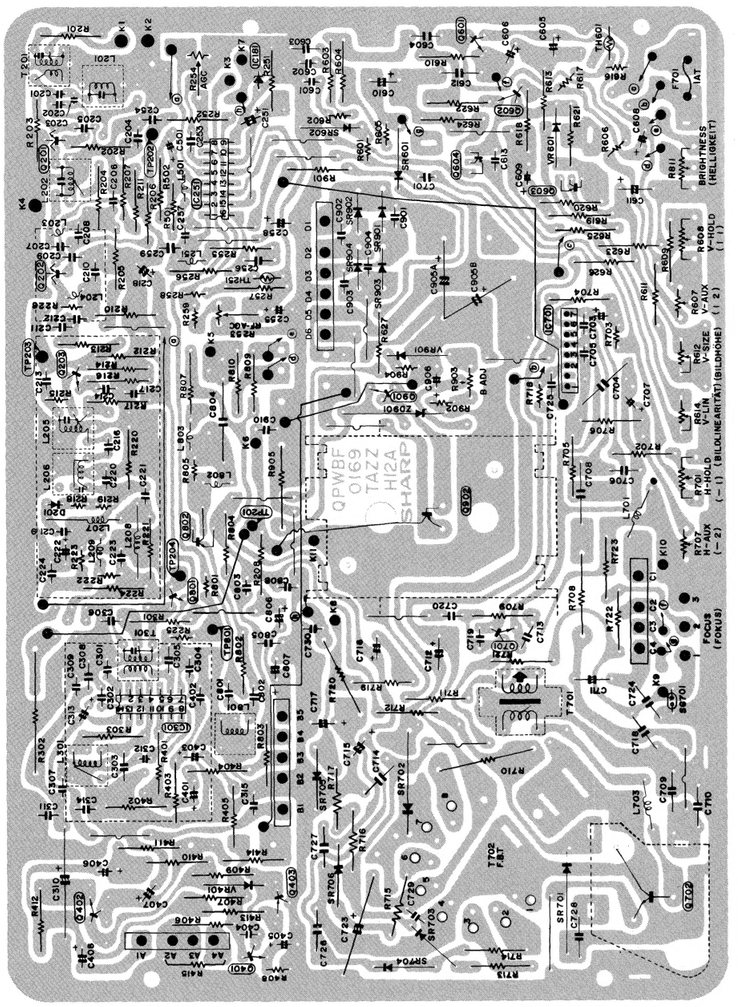
Place the VHF tuner in the UHF position.

Set the center frequency fo the Sweep Generator at 700 MHz. and tune the UHF tuner to this frequency (approximately Channel 49) so that the overall RF-IF response curce van be observed on the Oscilloscope. This response curve should be consistent with limits of the overall RF-IF Response Curve "A".

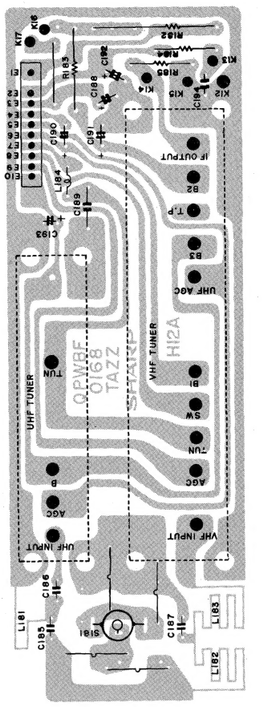
NOTE: The amplitude of the response curve should be kept at 1V P-P for this alignment.

Tune the Sweep Generator and the UHF tuner throughout the UHF range to check the overall performance.

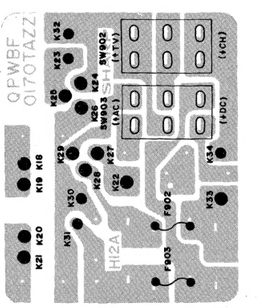
Wiring Side of P.W. Board



Main Circuit

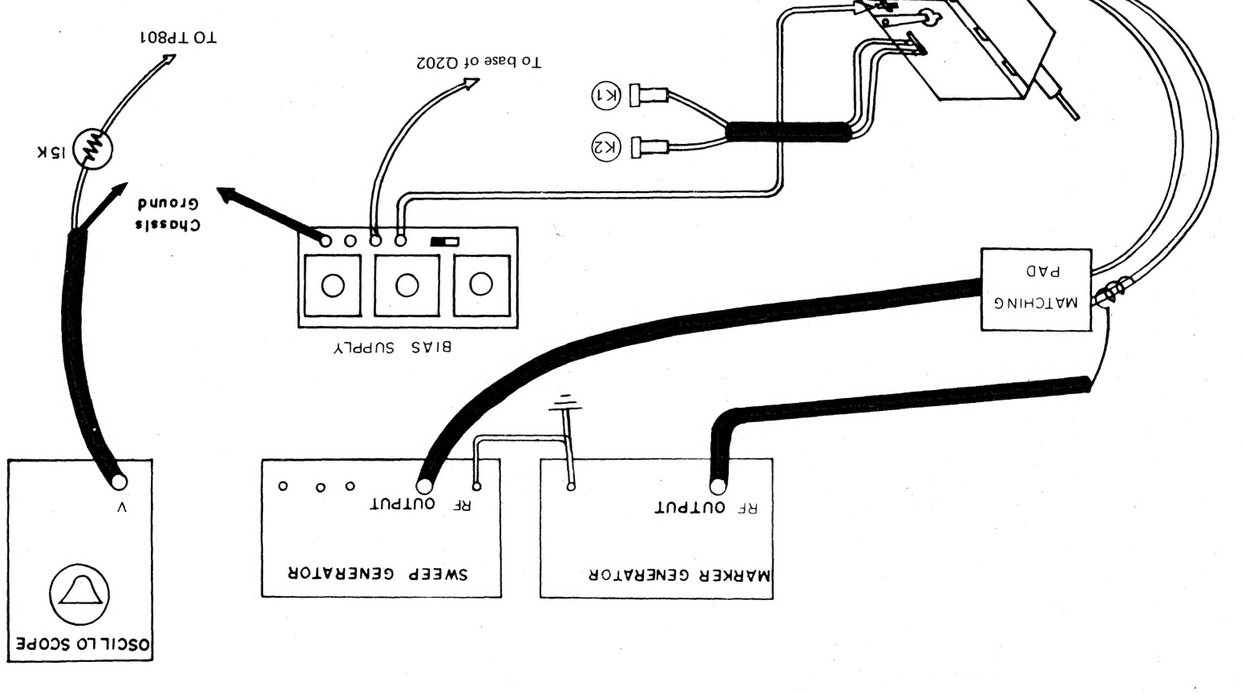


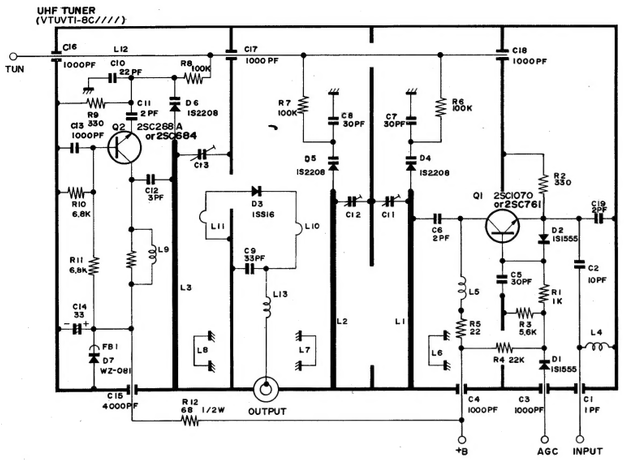
Tuner Circuit



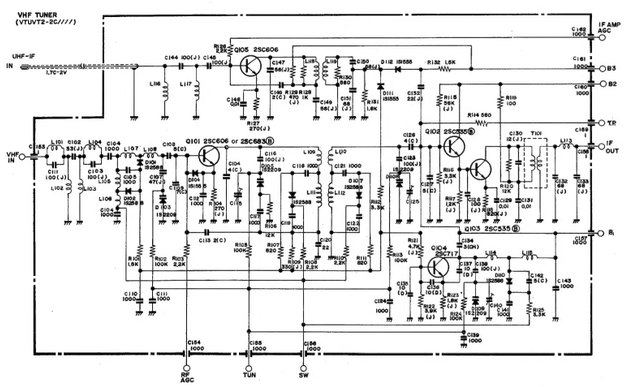
Power Circuit

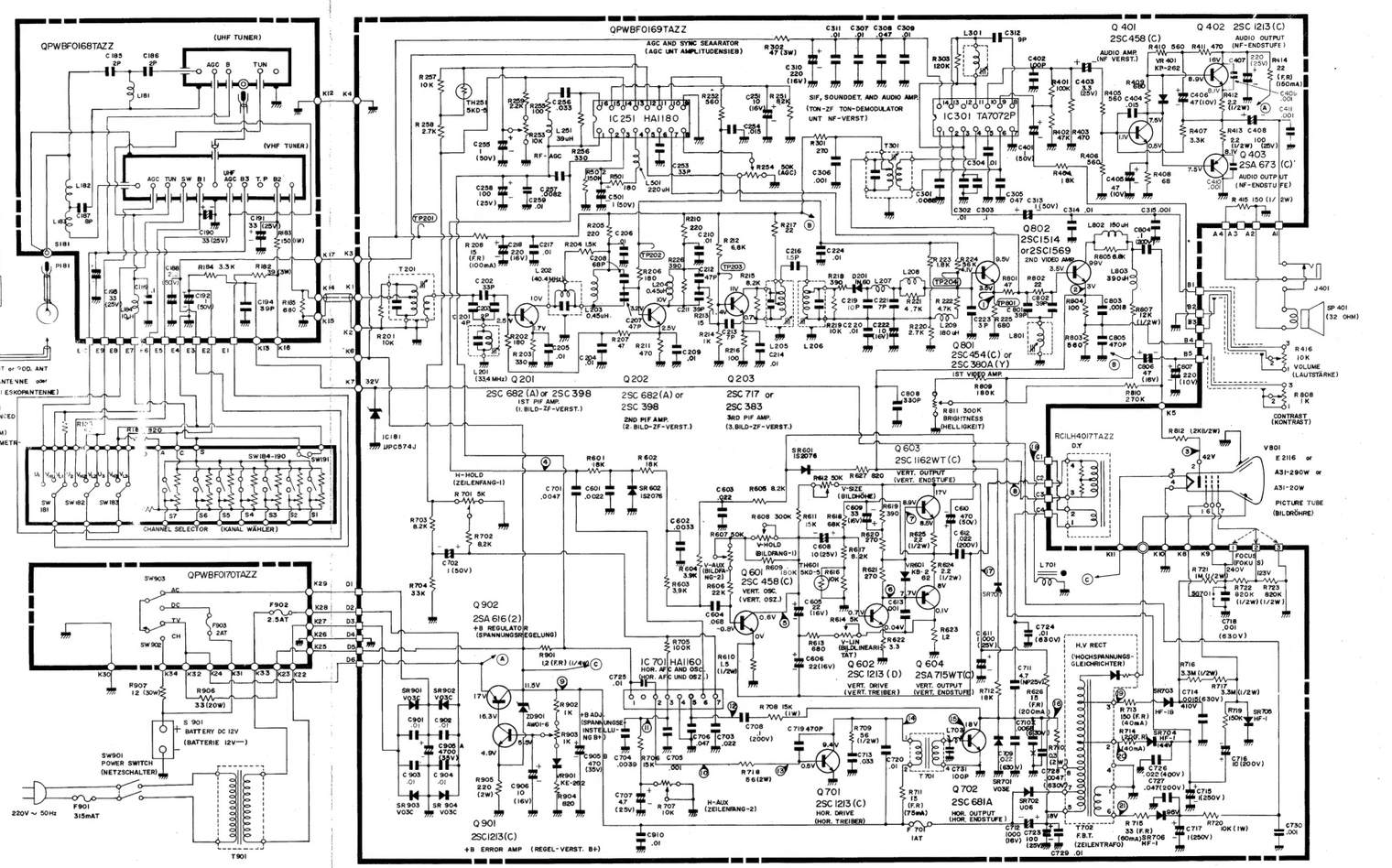
Figure 13

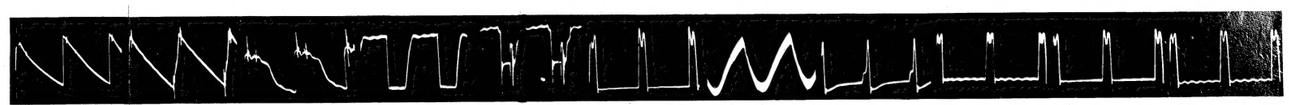




① 1Vp-p(V) ② 1.9Vp-p(V) ③ 58Vp-p(V) ④ 10Vp-p(H) ④ 10Vp-p(V) ⑤ 0.8Vp-p(V) ⑥ 18Vp-p(V) ⑦ 16Vp-p(V) ⑧ 17Vp-p(V) ⑨ 0.06Vp-p(V) ⑩ 1.8Vp-p(H)



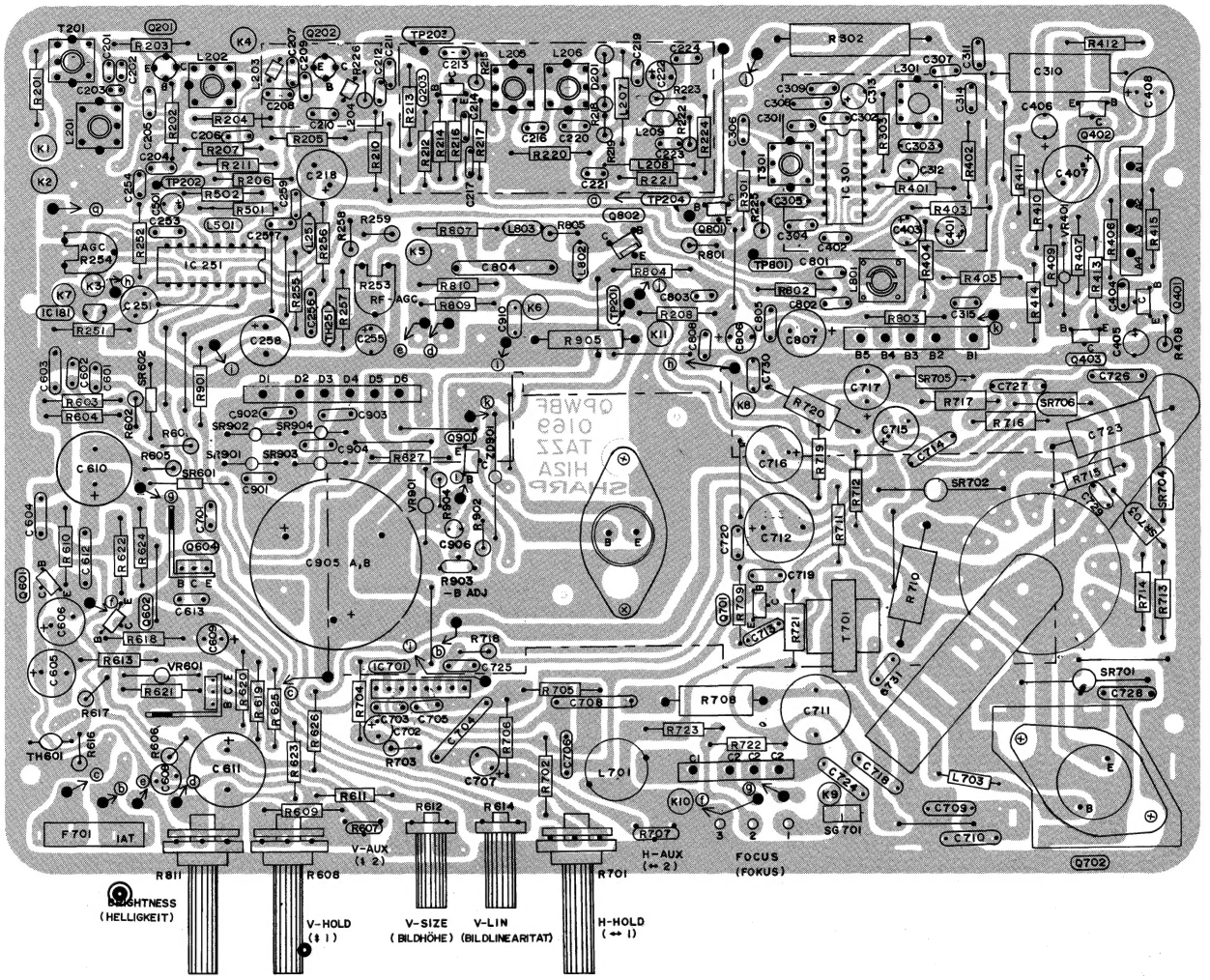




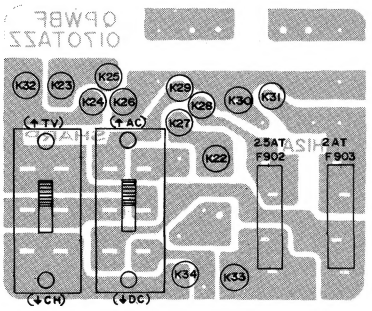
⑪ 2.5Vp-p(H) ⑫ 1.7Vp-p(H) ⑬ 1Vp-p (H) ⑭ 17Vp-p (H) ⑮ 13Vp-p (H) ⑯ 150Vp-p (H) ⑰ 0.8Vp-p (V) ⑱ 25Vp-p (H) ⑲ 500Vp-p (H) ⑳ 180Vp-p (H) ㉑ 130Vp-p (H)

SCHEMATIC DIAGRAM

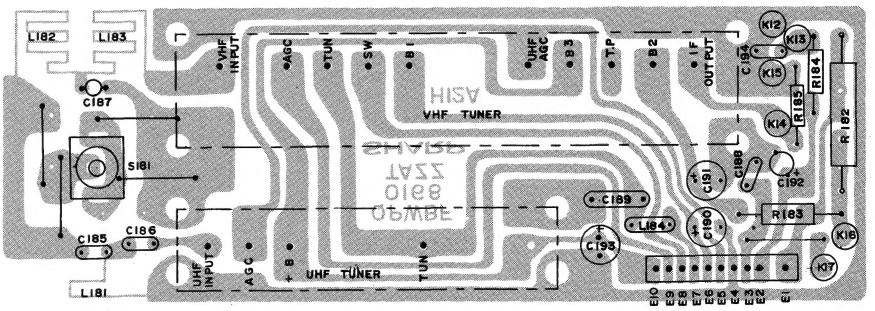
Component Side of P.W. Board



Main Circuit



Power Circuit



Tuner Circuit

PARTS LIST

REF. NO.	NEW PART NAME	DESCRIPTION	CODE

CAPACITORS

C185, C186	VCCSPA1H62R0C	2PF, 50V, .25PF, Discap	AA
C187	VCCSPA1H68R0D	8PF, 50V, Discap	AA
C188	VCQYKU1HM472K	.0047MFD, 50V, 10%, Mylar	AB
C189	VCQYSU1HM104K	.1MFD, 50V, 10%, Mylar	AC
C190, C191, C193	VCEAAH1EC336Y	33MFD, 25V, Electrolytic	AB
C192	VCEAAH1HC105A	1MFD, 50V, Electrolytic	AB
C194	VCCSPA1H6390J	39PF, 50V, Discap	AA
C201	VCCSPU1H64R0C	4PF, 50V, .25PF, Discap	AA
C202	VCCSPU1H6330J	33PF, 50V, 5%, Discap	AA
C203	VCCSPU1H62R0C	2PF, 50V, .25PF, Discap	AA
C204, C205, C206, C209, C210, C214, C217, C220, C224, C259	VCKZPA1HF103Z	.01MFD, 50V, Discap	AA
C207, C212	VCCSPA1H6470J	47PF, 50V, 5%, Discap	AA
C208	VCCSPA1H6680J	68PF, 50V, 5%, Discap	AA
C211	VCCSPA1H6390J	39PF, 50V, 5%, Discap	AA
C213, C221	VCCSPA1H67R0D	7PF, 50V, Discap	AA
C216	VCCSPA1H61R5C	1.5PF, 50V, .25PF, Discap	AA
C218	VCEAAH1CC227Y	220MFD, 16V, Electrolytic	AC
C219	VCCSPA1H6100D	10PF, 50V, Discap	AA
C222	VCEAAH1CC106Y	10MFD, 16V, Electrolytic	AB
C223	VCCSPA1H63R0C	3PF, 50V, 25PF, Discap	AA
C251	VCEABU1CW106M	10MFD, 16V, Electrolytic	AD
C252	VCQPSB2JA103K	.01MFD, 630V, Polypro Film	AB
C253	VCCSPA1H6330J	33PF, 50V, 5%, Discap	AA
C254	VCQYKU1HM153K	.015MFD, 50V, 10%, Mylar	AB
C255	VCEAAH1HC105A	1MFD, 50V, Electrolytic	AB
C256	VCQYSU1HM333K	.033MFD, 50V, 10%, Mylar	AB
C257	VCQYKU1HM822K	.0082MFD, 50V, 10%, Mylar	AB
C258	VCEAAH1EC107Y	100MFD, 25V, Electrolytic	AC
C301	VCQYKU1HM682K	.0068MFD, 50V, 10%, Mylar	AB
C302, C304, C307, C309, C311, C314	VCKZPA1HF103Z	.01MFD, 50V, Discap	AA
C303	VCQYKU1HM104K	.1MFD, 50V, 10%, Mylar	AC
C305, C308	VCQYKU1HM473K	.047MFD, 50V, 10%, Mylar	AC
C306, C315	VCKZPA1HB102K	.001MFD, 50V, 10%, Discap	AA
C310	VCEAAT1CW227Q	220MFD, 16V, Electrolytic	AD
C312	VCCWPU1H59R0D	9PF, 50V, Discap	AB
C313	VCEAAH1HC105A	1MFD, 50V, Electrolytic	AB
C401	VCEAAH1HC105A	1MFD, 50V, Electrolytic	AB
C402	VCCSPA1H6101K	100PF, 50V, 10%, Discap	AA
C403	VCEAAU1EW335R	3.3MFD, 25V, Electrolytic	AB
C404	VCQYKU1HM153K	.015MFD, 50V, 10%, Mylar	AB
C405, C406	VCEAAU1AW476Q	47MFD, 10V, Electrolytic	AC
C407	VCEAAH1EC227Y	220MFD, 25V, Electrolytic	AD

REF. NO.	NEW PART NAME	DESCRIPTION	CODE
C408	VCEAAH1EC107Y	100MFD, 25V, Electrolytic	AC
C501	VCEAAH1HC105A	1MFD, 50V, Electrolytic	AB
C601	VCQYKU1HM222K	.0022MFD, 50V, 10%, Mylar	AB
C602	VCQYKU1HM332K	.0033MFD, 50V, 10%, Mylar	AB
C603	VCQYKU1HM223K	.022MFD, 50V, 10%, Mylar	AB
C604	VCQYSU1HM683K	.068MFD, 50V, 10%, Mylar	AC
C605, C606	RC-EZ0029TAZZ	22MFD, 16V, Electrolytic	AD
C608	VCEAAH1EC106Y	10MFD, 25V, Electrolytic	AB
C609	VCEAAU1CW336Q	33MFD, 16V, Electrolytic	AC
C610	VCEAAH1EC477Y	470MFD, 50V, Electrolytic	AE
C611	VCEAAU1EW108Q	1000MFD, 25V, Electrolytic	AG
C612	VCQPSB2DA223K	.022MFD, 200V, 10%, Polypro Film	AB
C613	VCKZPA1HB102K	.001MFD, 50V, 10%, Discap	AA
C701	VCQYKU1HM472K	.0047MFD, 50V, 10%, Mylar	AB
C702	VCEAAH1HC105A	1MFD, 50V, Electrolytic	AB
C703	VCQYKU1HM223K	.022MFD, 50V, 10%, Mylar	AB
C704	VCQSMT1HS392J	.0039MFD, 50V, 5%, Styrone	AC
C705	VCQYKU1HM102K	.001MFD, 50V, 10%, Mylar	AB
C706	VCQYSU1HM473K	.047MFD, 50V, 10%, Mylar	AB
C707	VCEAAH1EC475A	4.7MFD, 25V, Electrolytic	AB
C708	VCQPSC2DA104K	.1MFD, 200V, 10%, Polypro Film	AC
C709	VCQPSC2JA223K	.022MFD, 630V, 10%, Polypro Film	AB
C710	VCQPSB2JA682K	.0068MFD, 630V, 10%, Polypro Film	AB
C711	RC-EZ0022TAZZ	4.7MFD, 25V, Spec. Electrolytic	AG
C712	VCEAAH1CC108Y	100MFD, 16V, Electrolytic	AE
C713	VCQYKU1HM333K	.033MFD, 50V, 10%, Mylar	AB
C714	VCQPSB2JA152K	.0015MFD, 630V, 10%, Polypro Film	AB
C715, C717	VCEAAU2EW105R	1MFD, 250V, Electrolytic	AD
C716	VCEAAU2DW106Q	10MFD, 200V, Electrolytic	AE
C718	VCQPSB2JA102K	.001MFD, 630V, 10%, Polypro Film	AB
C719	VCKZPA1HB471K	470PF, 50V, 10%, Discap	AB
C720, C725, C729	VCKZPA1HF103Z	.01MFD, 50V, Discap	AA
C723	VCEAAT1EW107Q	100MFD, 25V, Electrolytic	AE
C724	VCQPSB2JA103K	.01MFD, 630V, 10%, Polypro Film	AB
C726	VCQPSB2GA223K	.022MFD, 400V, 10%, Polypro Film	AB
C727	VCQPSB2DA473K	.047MFD, 200V, 10%, Polypro Film	AC
C728	VCQPSB2JA472K	.0047MFD, 630V, 10%, Polypro Film	AB
C730	VCKZPA1HB102K	.001MFD, 50V, 10%, Discap	AA
C731	VCCSPA1H6101K	100PF, 50V, 10%, Discap	AA
C801, C802	VCCSPA1H6390J	39PF, 50V, 5%, Discap	AA
C803	VCQYKU1HM182K	.0018MFD, 50V, 10%, Mylar	AB
C804	VCQPSC2DA104K	.1MFD, 200V, 10%, Polypro Film	AC
C805	VCKZPA1HB471K	470PF, 50V, 10%, Discap	AB
C806	VCEAAH1CC476Y	47MFD, 16V, Electrolytic	AB
C807	VCEAAH1AC227Y	220MFD, 10V, Electrolytic	AC
C808	VCCSPA1H6331K	330PF, 50V, 10%, Discap	AA
C901, C902, C903, C904	VCKZPA1HB102K	.001MFD, 50V, 10%, Discap	AA
C905-A, B	VCEA1Q1VBA94Q	4700MFD/470MFD, 35V, Electrolytic	AP
C906	VCEAAH1CC106Y	10MFD, 16V, Electrolytic	AB
C910	VCKZPA1HF103Z	.01MFD, 50V, Electrolytic	AA

RESISTOR

R181	VRD-ST2EY561J	560 ohm	AA
R182	VRS-PT3LB390J	39 ohm, 3W, 5%, Oxide Film	AC
R183	VRS-PT3AB151J	150 ohm, 1W, 5%, Oxide Film	AB

PARTS LIST

REF. NO.	NEW PART NAME	DESCRIPTION	CODE
R184	VRD-ST2EY332J	3.3K ohm	AA
R185	VRD-ST2EY681J	680 ohm	AA
R186	VRC-MT2EG470J	47 ohm	AA
R187	VRD-ST2EY821J	820 ohm	AA
R201	VRC-MB2EG103K	10K ohm, ¼W, 10%, Carbon	AA
R202, R206	VRC-MB2EG181K	180 ohm, ¼W, 10%, Carbon	AA
R203	VRC-MB2EG331K	330 ohm, ¼W, 10%, Carbon	AA
R204	VRC-MB2EG152J	1.5K ohm	AA
R205, R210	VRC-MB2EG221K	220 ohm, ¼W, 10%, Carbon	AA
R207	VRC-MB2EG470K	47 ohm, ¼W, 10%, Carbon	AA
R208	RR-XZ0006TAZZ	15 ohm, 100mA, Fuse Resistor	AD
R211	VRC-MB2EG471K	470 ohm, ¼W, 10%, Carbon	AA
R212	VRC-MB2EG682K	6.8K ohm, ¼W, 10%, Carbon	AA
R213	VRC-MB2EG150K	15 ohm, ¼W, 10%, Carbon	AA
R214	VRC-MB2EG102K	1K ohm, ¼W, 10%, Carbon	AA
R215	VRC-MT2EG822K	8.2K ohm, ¼W, 10%, Carbon	AA
R216	VRC-MB2EG101K	100 ohm, ¼W, 10%, Carbon	AA
R217	VRC-MB2EG220K	22 ohm, ¼W, 10%, Carbon	AA
R218, R226	VRC-MT2EG391K	390 ohm, ¼W, 10%, Carbon	AA
R219	VRC-MT2EG103K	10K ohm, ¼W, 10%, Carbon	AA
R220	VRD-ST2EY272J	2.7K ohm	AA
R221	VRC-MB2EG472K	4.7K ohm, ¼W, 10%, Carbon	AA
R222	VRC-MT2EG472K	4.7K ohm, ¼W, 10%, Carbon	AA
R223	VRC-MT2EG182K	1.8K ohm, ¼W, 10%, Carbon	AA
R224	VRD-ST2EY563J	56K ohm	AA
R225	VRC-MT2EG681K	680 ohm, ¼W, 10%, Carbon	AA
R251	VRD-ST2EY822J	8.2K ohm	AA
R252	VRD-ST2EY561J	560 ohm	AA
R255	VRD-ST2EY101J	100 ohm	AA
R256	VRD-ST2EY331J	330 ohm	AA
R257	VRD-ST2EY103J	10K ohm	AA
R258	VRD-SU2EY272J	2.7K ohm	AA
R259	VRD-SU2EY222J	2.2K ohm	AA
R301	VRC-MB2EG271K	270 ohm, ¼W, 10%, Carbon	AA
R302	VRS-PT3LB470K	47 ohm, 3W, 10%, Oxide Film	AC
R303	VRC-MB2EG124K	120K ohm, ¼W, 10%, Carbon	AA
R401	VRC-MB2EG104K	100K ohm, ¼W, 10%, Carbon	AA
R402	VRC-MB2EG473K	47K ohm, ¼W, 10%, Carbon	AA
R403	VRD-ST2EY471J	470 ohm	AA
R404	VRD-ST2EY183J	18K ohm	AA
R405, R406	VRD-ST2EY561J	560 ohm	AA
R407	VRD-ST2EY332J	3.3K ohm	AA
R408	VRD-SU2EY680J	68 ohm	AA
R409	VRD-ST2EY681J	680 ohm	AA
R410	VRD-SB2EY561J	560 ohm	AA
R411	VRD-SB2EY471J	470 ohm	AA
R412, R413	VRD-SA2HD2R2J	2.2 ohm, ½W, 5%, Carbon	AA
R414	RR-XZ0008TAZZ	22 ohm, 150mA Fuse Resistor	AD
R415	VRD-SA2HD151J	150 ohm, ½W, 5%, Carbon	AA
R501	VRD-SB2EY181J	180 ohm	AA
R502	VRD-ST2EY154J	150K ohm	AA
R601, R602	VRD-SU2EY183J	18K ohm	AA
R603	VRD-SB2EY392J	3.9K ohm	AA
R604	VRD-ST2EY392J	3.9K ohm	AA
R605, R617	VRD-SU2EY822J	8.2K ohm	AA
R606	VRD-SU2EY223J	22K ohm	AA
R609	VRD-ST2EY184J	180K ohm	AA
R610	VRD-SA2HD1R5J	1.5 ohm, ½W, 5%, Carbon	AA

REF. NO.	NEW PART NAME	DESCRIPTION	CODE
R611	VRD-ST2EY153J	15K ohm	AA
R613	VRD-ST2EY681J	680 ohm	AA
R616	VRD-SU2EY103J	10K ohm	AA
R618	VRD-ST2EY683J	68K ohm	AA
R619	VRD-SB2EY391J	390 ohm	AA
R620, R621	VRD-ST2EY271J	270 ohm	AA
R622	VRD-ST2EY3R3J	3.3 ohm	AA
R623	VRD-SB2EY1R2J	1.2 ohm	AA
R624, R625	VRD-SA2HD2R2J	2.2 ohm, ½W, 5%, Carbon	AA
R626	RR-XZ0009TAZZ	15 ohm, 200mA, Fuse Resistor	AD
R627	VRD-ST2EY821J	820 ohm	AA
R702	VRD-ST2EY822J	8.2K ohm	AA
R703	VRD-SU2EY822J	8.2K ohm	AA
R704	VRD-ST2EY333J	33K ohm	AA
R705	VRD-ST2EY104J	100K ohm	AA
R706	VRN-RT2EK153J	15K ohm, ¼W, 5%, Metalize Film	AB
R708	VRS-PT3AB153J	15K ohm, 1W, 5%, Oxide Film	AB
R709	VRD-SA2HD560J	56 ohm, ½W, 5%, Oxide Film	AA
R710	VRW-KT3DDR30K	0.3 ohm, 2W, 10%, Cement	AC
R711	RR-XZ0005TAZZ	15 ohm, 75mA, Fuse Resistor	AD
R712	VRD-ST2EY183J	18K ohm	AA
R713	RR-XZ0010TAZZ	150 ohm, 40mA, Fuse Resistor	AD
R714	RR-XZ0013TAZZ	120 ohm, 40mA, Fuse Resistor	AD
R715	RR-XZ0011TAZZ	33 ohm, 60mA, Fuse Resistor	AD
R716, R717	VRD-SA2HD335J	3.3 Meg ohm, ½W, 5%, Carbon	AA
R718	VRS-PT3DB560J	56 ohm, 2W, 5%, Oxide Film	AB
R719	VRD-ST2EY154J	150K ohm	AA
R720	VRS-PT3AB103J	10K ohm, 1W, 5%, Oxide Film	AB
R721	VRD-SA2HD105J	1 Meg ohm, ½W, 5%, Carbon	AA
R722, R723	VRD-SA2HD824J	820K ohm, ½W, 5%, Carbon	AA
R801	VRC-MT2EG470K	47 ohm, ¼W, 10%, Carbon	AA
R802	VRC-MB2EG220K	22 ohm, ¼W, 10%, Carbon	AA
R803	VRD-ST2EY561J	560 ohm	AA
R804	VRD-ST2EY101J	100 ohm	AA
R805	VRD-SU2EY682J	6.8K ohm	AA
R807	VRD-SA2HD123J	12K ohm, ½W, 5%, Carbon	AA
R809	VRD-ST2EY184J	180K ohm	AA
R810	VRD-ST2EY274J	270K ohm	AA
R901	RR-XZ0012TAZZ	1.2 ohm, ¼W, 10%, Fuse Resistor	AD
R902	VRD-SU2EY102J	1K ohm	AA
R904	VRC-MT2EG821J	820 ohm	AA
R905	VRS-PT3DB221J	220 ohm, 2W, 5%, Oxide Film	AB
R906	VRW-CV4DD330K	33 ohm, 20W, 10%, Resin	AF
R907	VRW-CV4LD120K	12 ohm, 30W, 10%, Resin	AG

Unless otherwise specified all resistor are ¼W, 5% Carbon type.

CONTROLS

R253	RVR-M7074TAZZ	10K ohm, Pot., RF AGC	AC
R254	RVR-M7073TAZZ	10K ohm, Pot., AGC	AC
R416, SW901	RVR-A4001TAZZ	10K ohm, Pot., Pull-On/ Volume	AQ
R607	RVR-M7010TAZZ	50K ohm, Pot., V-Aux.	AC
R608	RVR-M7051TAZZ	300K ohm, Pot., V-Hold	AD
R612	RVR-M7076TAZZ	50K ohm, Pot., V-Size	AC
R614	RVR-M7075TAZZ	5K ohm, Pot., V-Lin	AC
R701	RVR-M7077TAZZ	5K ohm, Pot., H-Hold	AD
R707	RVR-M7053TAZZ	10K ohm, Pot., H-Aux	AC
R808	RVR-E1004TAZZ	1K ohm, Pot., Contrast	AF
R811	RVR-M7051TAZZ	300K ohm, Pot., Brightness	AD
R903	RVR-M7046TAZZ	1K ohm, Pot., +B Adj.	AC

PARTS LIST

COILS AND TRANSFORMERS

REF. NO.	NEW PART NAME	DESCRIPTION	CODE
	RCILH4017TAZZ	Deflection Yoke	AW
L184	VP-LF100K0000	Coil, Peaking	AB
L201	RCILI0174TAZZ	Coil, Sound Trap (33.4MHz)	AE
L202	RCILI0092TAZZ	Coil, Adj. Trap (40.4MHz)	AE
L203, L204	RCILF0022TAZZ	Coil, Peaking	AC
L205	RCILI0139TAZZ	Coil, Pix Detector	AE
L206	RCILI0175TAZZ	Coil, Pix Detector	AE
L207, L208	RCILF0001TAZZ	Coil, Filter	AD
L209	VP-LF181K0000	Coil, Peaking	AB
L251	VP-LF390K0000	Coil, Peaking	AB
L301	RCILI0173TAZZ	Coil, Sound Detector	AE
L501	VP-LF221K0000	Coil, Peaking	AB
L701	RCILZ0043TAZZ	Coil, H-Lin	AH
L702	RCILF0005TAZZ	Coil	AA
L703	RCILZ0016TAZZ	Coil	AB
L801	RCILI0071TAZZ	Coil, 5.5MHz	AE
L802	VP-LF151K0000	Coil, Peaking	AB
L803	VP-LF391K0000	Coil, Peaking	AB
T201	RCILI0091TAZZ	Transformer, 1st Pix IF	AE
T301	RCILI0176TAZZ	Transformer, Sound IF	AE
T701	RTRNT0017TAZZ	Transformer, Horizontal Drive	AG
T702	RTRNF2023TAZZ	Transformer, Horizontal Flyback	AZ
T901	RTRNP0100TAZZ	Transformer, Power	AY

Printed Wiring Board

	DUNTK0674HA05	(DUNTK0674RA05, DUNTK0675RA05) Unit	CB

MISCELLANEOUS

REF. NO.	NEW PART NAME	DESCRIPTION	CODE
	GCABA1539TASA	Cabinet, Front, (Red)	AW
	GCABA1539TASB	Cabinet, Front, (White)	AW
	GCABB1539TASA	Cabinet, Back, (Red)	AV
	GCABB1539TASB	Cabinet, Back, (White)	AV
	JKNBK1051CESA	Knob, Pull-On/Volume, Contrast	AF
	QANTR0011TAZZ	Antenna, Telescoping Monopole	AL
	VTUVT2-2C////	Tuner, VHF	BH
	VTUVT1-8C////	Tuner, UHF	BD
	QSLC-0001TAZZ	Channel Selector	BG
	QSOCN0604CEZZ	Socket, Power	AB
	QSOCN0502CEZZ	Socket, Volume, Contrast	AB
	QSOCN0403CEZZ	Socket, Sound	AB
	QSOCN0009TAZZ	Socket, Tuner Combine	AA
	QSOCB0002TAZZ	Socket, DC	AD
	QSOCV0701SEZZ	Socket, CRT	AC
	QPLGN0404CEZZ	Plug, Sound	AB
	QPLGN0505CEZZ	Plug, Volume, Contrast	AB
	QPLGN0603CEZZ	Plug, Power	AB
	QPLGN0016TAZZ	Plug, Tuner	AC
	QJAKA0001CEZZ	Jack, Earphbne	AC
F901	QFS-C1021TAZZ	Fuse, 1AT	AE
F902	QFS-C2521TAZZ	Fuse, 2.5AT	AF
F903	QFS-C2022TAZZ	Fuse, 2AT	AE
SW902, SW903	QSW-S0009TAZZ	Switch, AC-DC/Change	AL

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